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# **Environmental Compliance Research for ONR 312OA At-Sea Experiments**

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## **LONG-TERM GOALS**

The long-term goal of this effort is to facilitate ONR 321 Ocean Acoustics Program at-sea experiments through the preparation of scientifically rigorous environmental compliance documentation.

## **OBJECTIVES**

The objective of this effort is to conduct analyses of the potential impacts of ocean acoustics tests and to prepare environmental documents compliant with applicable Federal and State statutes and DoD/DoN regulations and policies.

## **APPROACH**

For each at-sea experiment, a team of marine biologists, acousticians, and analysts study proposed scenarios, acoustic source properties, forecast acoustic conditions, and marine species populations and vulnerabilities to determine potential impacts and develop mitigation measures.

## **WORK COMPLETED**

For each experiment, the zones of influence for potential acoustic impacts on various marine species were calculated and the estimated number of animals potentially impacted was calculated. By working closely with planners, environmental analysts were able to influence the design of these experiments so that their objectives could be met while potential effects on the marine environment were minimized.

## **RESULTS**

Scientific analysis was conducted, environmental documentation was completed, and approval was obtained for the Joint U.S/Taiwanese Acoustic Studies in the Variability Around the Northern South China Sea/Windy Islands Solitons Experiment (VANS/WISE). Analysis was completed and documents started for the upcoming Makai Experiment at the Shallow Water Training Range (SWTR) of the Pacific Missile Range Facility (PMRF) on the western coast of the island of Kauai in Hawaii and the BEAMER Underwater Observatory Experiment to be conducted at University of Rhode Island (URI) Graduate School of Oceanography (GSO).

## **IMPACT/APPLICATIONS**

The analyses conducted under this effort were required by U.S. law and by DoD, DoN, OPNAV, and ONR regulations.

## **TRANSITIONS**

N/A this research enables experimentation and testing by other projects

## **RELATED PROJECTS**

Environmental compliance documents were prepared in support of the VANS/WISE Experiment, the BEAMER Experiment, the SAX Experiment and the Makai Experiment. These experiments supported multiple Ocean Acoustic projects.

## **PUBLICATIONS**

*Analysis of Potential Environmental Effects Resulting from U.S. Participation in the 2005 Acoustic Studies in the Variability Around the Northern South China Sea/Windy Islands Solitons Experiment (VANS/WISE)*, Technical Report, March 2005.